



CYBEROLOGY

AN OPTIMIZED APPROACH
TO THE CYBER-WORLD

Edited by Mohd. Shahid Husain,
Mohammad Faisal, Halima Sadia, Tasneem Ahmed,
Saurabh Shukla, and Adil Kaleem

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Contents

Preface.....ix
Acknowledgments.....xxi
About the Editors xxiii
Contributorsxxvii

Chapter 1 Changing Paradigm in AI Application and Its Impact
on Cybercrime: Review of Major Global Events 1

*Neyha Malik, Firoz Husain, Anis Ali,
and Sumbul Javed*

Chapter 2 Transformative Impact: Social Robots Redefining
Industries and Services..... 24

*Farhina Sardar Khan, Priyanka Bajpai,
and Syed Shahid Mazhar*

Chapter 3 Strategies for Cyber-Resilience: Combatting Advanced
Persistent Threats in the Digital Age 52

*Mohd Haroon, Manish Madhava Tripathi,
Afsaruddin Khan, Shish Ahmad,
Muhammad Kalamuddin Ahmad, and Mohd Husain*

Chapter 4 Unveiling the Digital Trails: A Survey of Contemporary
Digital Forensics Tools and Techniques..... 71

*Wasim Khan, Mohammad Ishrat,
and Monia Mohammed Al Farsi*

Chapter 5 Issues and Challenges in Emerging Cyber Forensics
and Traditional Cyber Forensics Methods90

*Harold Andrew Patrick, Praveen Gujjar J,
Guru Prasad M S, Rishi Kumar,
and Naveen Kumar H N*

Chapter 6 Optimized Approaches for Cyber Forensics
Tools Applications Case Studies 103

Shubham Kumar and Sarfaraz Alam

Chapter 7	A Study of Cyber Threats and Security Frameworks in Cloud Computing	120
	<i>Kashif Asad and Mohd. Faizan Farooqui</i>	
Chapter 8	Cyber Threats in Cloud Computing: Unveiling Vulnerabilities and How to Strengthen the Defense	135
	<i>Faheem Ahmad and Mohammed Ishrat</i>	
Chapter 9	A Comprehensive Analysis of Vulnerabilities and Cybersecurity Issues for Digital Agriculture and Food Industry	150
	<i>Gausiya Yasmeeen, Syed Adnan Afaq, and Saman Uzma</i>	
Chapter 10	Unveiling Critical Success Factors of Zero-Trust Cybersecurity Implementation in Food Industry from a Stage of Change Perspective.....	170
	<i>Pham Quang Huy and Vu Kien Phuc</i>	
Chapter 11	Understanding and Mitigating Cyber Threats in Smart Fruit Crops Safety: An Analysis of Vulnerability and Best Practices for Securing Agricultural Systems	190
	<i>Harish Chandra Verma and Mohammed Siddique</i>	
Chapter 12	Cyber Resilience in a Digital World: Securing Healthcare, Agriculture, and Food Industry against Emerging Threats.....	200
	<i>Mohammad Ishrat, Wasim Khan, and Danish Ather</i>	
Chapter 13	Cyberbullying: Understanding, Preventing, and Addressing Online Harassment.....	225
	<i>Syed Adnan Afaq, Mohammad Faisal, Saurabh Srivastava, Tasneem Ahmed, Gausiya Yasmeeen, Soni Singh, and Saman Uzma</i>	
Chapter 14	The Perils of Cyberbullying on Social Media: Detection and Prevention with Artificial Intelligence	238
	<i>Neha Bhushan and Vipin Khattri</i>	

Chapter 15 Cybersecurity Challenges and Countermeasures in Smart Cities for Sustainable Environment Development: A Comprehensive Analysis of Threats and Resilience Strategies.....	252
<i>Saurabh Srivastava, Tasneem Ahmed, Nayyar Ali Usmani, Syed Adnan Afaq, and Mohammad Faisal</i>	
Chapter 16 Cyber Risk Management in IoT Security Technologies.....	264
<i>Amrit Suman, Preetam Suman, Sasmita Padhy, and Shahana Gajala Qureshi</i>	
Chapter 17 Landscape of Cyber Terrorism on Internet and AI-Powered Countermeasures.....	282
<i>Vipin Khattri, Neha Bhushan, Deepak Kumar Singh, and Mohammad Shiblee</i>	
Chapter 18 Hybrid Secure Clustered Nature-Inspired Decision Support System for Secure Data Communication in Cyberspace.....	297
<i>Shahana Gajala Qureshi, Sasmita Padhy, Preetam Suman, and Amrit Suman</i>	
Chapter 19 Transforming Network Protection via Open Innovation Strategies.....	317
<i>Mohd. Noman Mansoori, Azra Siddiqui, and Priyanka Tripathi</i>	
Chapter 20 Emerging Role of Digital Library in Evaluating Copyright Regulations.....	329
<i>Priyanka Tripathi, Preetika Tripathi, and Mohd. Noman Mansoori</i>	
Index	349

1 Changing Paradigm in AI Application and Its Impact on Cybercrime

Review of Major Global Events

*Neyha Malik, Firoz Husain, Anis Ali,
and Sumbul Javed*

1.1 INTRODUCTION

Artificial intelligence (AI) and cybersecurity mark a transformative leap forward in the detection and prevention of ever-evolving cyber threats and strengthening the overall defense system of a country. It helps in automating analysis, identifying patterns, and predicting potential vulnerabilities in large datasets and henceforth mitigating risks with enhanced real-time monitoring strategies. It is not a local issue but rather a global concern; therefore, research and collaboration are imminent to stay ahead in this because AI can wreak havoc if exploited by hackers. The insights incorporated in this chapter have been taken from the experiences and happenings of industry, academia, and foreign sectors in order to highlight the relevant challenges and opportunities as well as the potential ventures in the science and technology domain by the emergence of AI. This technology has vast potential for application which may have far-reaching impacts on the future industry and society at large. The contribution of this study is far-reaching in making the reader aware of the various strategies and infrastructure erected at the global level to mitigate a global threat. This will help in benchmarking the best practices. Technology is deeply rooted in every aspect of our lives in this digital age. Henceforth, cybersecurity has gained unprecedented importance with the burgeoning internet-connected devices; the potential risks have expanded significantly related to the rising digital data transactions and increasing reliance on cloud computing. Since the activities of individuals, businesses, and governments have become increasingly interconnected, the need to safeguard and maintain the integrity of digital systems has become a paramount priority. Cyberattacks can lead to severe consequences, such as financial losses, compromised sensitive data and personal information, breaches in critical infrastructure, and even threats to national security.

Cybersecurity protects vulnerable computer data networks from cyber threats of hacking, unauthorized access, data breaches, and complicated cyberattacks. It